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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/872,762	06/01/2001	Patrick Nunally	PATRIOT.015A	9918
20995	7590	10/06/2004	EXAMINER	
KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			NGUYEN, VAN H	
			ART UNIT	PAPER NUMBER
			2126	

DATE MAILED: 10/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,762

Applicant(s)

NUNALLY, PATRICK

Examiner

VAN H NGUYEN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 June 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/4/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-29 are presented for examination.

Specification

2. The disclosure is objected to because of the following informalities:

“a TCIP/IP stack” (page 7, line 25) should read “a TCP/IP stack”.

Appropriate correction is required.

Claim Objections

3. Claim 3 is objected to because of the following informalities:

“a TCIP/IP stack” (claim 3, line 2) should read “a TCP/IP stack”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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5. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following phrases lack antecedent basis:

- (i) the interface (claim 1, line 9; claim 4, line 15; and claim 8, line 19)
- (ii) the remote virtual machine (claim 14, line 7)
- (iii) the request (claim 15, line 2; claim 23, line 3)

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-11, 13, 14, 16-22, and 24-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Balakrishnan et al.** (U.S. 6,763,382 B1).

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8. As to claim 14, Balakrishnan teaches the invention substantially as claimed including a server for communicating instructions over a network from a virtual machine to a host processor with a virtual machine instruction processor (see the abstract; col.8, lines 30-50; and col.11, lines 63-67), the server comprising:

a network (fig. 1b and associated text in col.8, lines 6-21);

a virtual machine configured to receive virtual language commands from a remote virtual machine instruction processor (col.8, lines 63-col.9, lines 11), and identify byte-codes to the remote virtual machine (col.11, lines 60-67) through the communication controller.

While Balakrishnan teaches a network system having a remote host system and a local host system, Balakrishnan does not specifically teach “a communication controller.”

It would have been obvious to one of ordinary skill in the art to have applied the teachings of Balakrishnan to include the features as claimed because Balakrishnan’s teachings would have provided the capability for controlling transfer of data between the local host system and the remote host system.

The fact that Balakrishnan’s teachings “communication links for managing transfer of data... a network interface for controlling data communication” (col.8, lines 25-33) and the purpose of managing transfer of data and controlling data communication in Balakrishnan suggests “a communication controller.”

9. As to claim 16, Balakrishnan teaches analyze a history of requests from the virtual machine instruction processor (col.9, lines 12-18).

10. As to claim 17, Balakrishnan teaches the virtual machine is a Java virtual machine (col.11, line 63).

11. As to claim 1, Balakrishnan teaches the invention substantially as claimed including a virtual machine instruction processor for executing commands using a remote virtual machine (see the abstract; col.8, lines 30-50; and col.11, lines 63-67), comprising:

a local memory cache for storing executable data for commands (col.5, lines 32-35 and col.8, lines 1-3 and 40-42);

a local processor for executing virtual machine instructions (col.8, lines 40-41), wherein the local processor is configured to search the local memory cache for executable data when a command is received (col. 5, lines 32-35 and col.8, line 63-col.9, line 4) and transmit a command request to a remote virtual machine if the executable data for the command are not found in the local memory cache (col.9, lines 4-12); and

While Balakrishnan teaches the local processor, the local memory cache and the remote virtual machine, Balakrishnan does not specifically teach "a controller."

It would have been obvious to one of ordinary skill in the art to have applied the teachings of Balakrishnan to include the features as claimed because Balakrishnan's teachings would have provided the capability for controlling transfer of data between the local host system and the remote host system.

The fact that Balakrishnan's teachings "the cache manager controls transfer of data from the remote host system into the cache buffer, and manages the data stored in the cache buffer" (col.10 lines 16-18) and the purpose of controlling transfer of data in Balakrishnan suggests "a controller."

12. As to claim 2, Balakrishnan teaches a read only memory (col.13 lines 45-52).

13. As to claim 3, Balakrishnan teaches a TCP/IP stack (col.13 lines 22-32).

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14. As to claim 4, the rejection of claim 1 above is incorporated herein in full.

Additionally, Balakrishnan further teaches a host processor (col.8, lines 30-31 and fig.2)

and a virtual machine instruction processor (col.8, lines 40-42 and col.11, lines 44-62).

While Balakrishnan teaches a network for communicating a remote virtual machine, Balakrishnan does not specifically teach “a communication controller.”

It would have been obvious to one of ordinary skill in the art to have applied the teachings of Balakrishnan to include the features as claimed because Balakrishnan’s teachings would have provided the capability for controlling transfer of data between the local host system and the remote host system.

The fact that Balakrishnan’s teachings “communication links for managing transfer of data...a network interface for controlling data communication” (col.8, lines 25-33) and the purpose of managing transfer of data and controlling data communication in Balakrishnan suggests “a communication controller.”

15. As to claim 5, Balakrishnan teaches the virtual machine instruction processor is connected to each of the plurality of host processors (col.8, lines 6-21 and col.11, lines 63-65).

16. As to claim 6, Balakrishnan teaches each of the plurality of host processor is connected to a different one of the plurality of virtual machine instruction processors (fig. 1b).

17. As to claim 7, Balakrishnan teaches the local processor is the host processor and the host processor treats the virtual machine instruction processor as a co-processor (col.8, lines 40-50).

18. As to claim 8, the rejection of claim 1 above is incorporated herein in full.

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Additionally, Balakrishnan further teaches a network; a remote device a virtual machine.
a host device not co-located with the remote device

19. As to claim 9, Balakrishnan teaches the Internet (col.9, line 21).
20. As to claim 10, Balakrishnan teaches a Java virtual machine (col.11, line 63).
21. As to claim 11, Balakrishnan teaches the virtual machine instruction processor transmits command requests to the remote virtual machine (col.9, lines 4-10).
22. As to claim 13, Balakrishnan teaches analyze a history of requests from the virtual machine instruction processor (col.9, lines 12-18).
23. As to claim 18, the rejection of claim 1 above is incorporated herein in full.
Additionally, Balakrishnan further teaches executing the remote virtual machine to obtain executable data required to execute the command request; returning executable data to the virtual machine instruction processor from the remote virtual machine (col.9, lines 4-11).

While Balakrishnan teaches the virtual machine instruction processor,
Balakrishnan does not specifically teach “executing the executable data.”

It would have been obvious to one of ordinary skill in the art to have applied the teachings of Balakrishnan to include the features as claimed because Balakrishnan’s teachings would have provided the capability for allowing only the data referenced by a user at the requesting end-user system, and not already present in the cache buffer, are retrieved from the remote host system.

The fact that Balakrishnan’s teachings “the cache manager utilizes a cache directory...performing function...providing data pages to the end-user systems.” (col.10,

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lines 16-25) and the purpose of performing function and providing data pages in Balakrishnan suggests “executing the executable data.”

24. As to claim 19, Balakrishnan teaches storing the executable data in the local memory.

25. As to claim 20, Balakrishnan teaches the executable data comprises operations, byte-codes, classes and/or translations for the command (col.11, lines 61-64).

26. As to claim 21, Balakrishnan teaches a Java virtual machine (col.11, line 63).

27. As to claim 22, Balakrishnan teaches transmitting the command to the remote virtual machine includes transmitting the command over the Internet (col.9, line 21).

28. As to claim 24, Balakrishnan teaches analyzing a history of requests transmitted from the virtual machine instruction processor (col.9, lines 12-18).

29. As to claims 25 and 26, include the same subject matter as in claims 18 and 21 above, and are similarly rejected under the same rationale.

30. As to claim 27, Balakrishnan teaches the command request is transmitted over a network (col.4, lines 17-26).

31. Claims 12, 15, 23, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Balakrishnan et al.** in view of **Beadle et al.** (U.S. 6,433,794 B1).

32. As to claim 12, Balakrishnan does teach the virtual machine instruction processor and the request, but does not specifically teach identity of the virtual machine instruction processor from the request.

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Beadle teaches identity of the virtual machine instruction processor from the request (col.2, line 66-col.3, line 5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Beadle and Balakrishnan because Beadle's teaching would have provided the capability for identifying and selecting the remote virtual machine to provide the requested data for the virtual machine.

33. As to claim 15, includes the same subject matter as in claim 12 above, and is similarly rejected under the same rationale.

34. As to claim 23, includes the same subject matter as in claim 12 above, and is similarly rejected under the same rationale.

35. As to claim 28, the rejection of claim 18 above is incorporated herein in full. Additionally, Balakrishnan further teaches a remote Java virtual machine (col.11, line 63) and the Internet (col.9, line 21). Balakrishnan, however, does not specifically teach identifying the identity of the remote virtual machine instruction processor transmitting the command request.

Beadle teaches identifying the identity of the remote virtual machine instruction processor transmitting the command request (col.2, line 66-col.3, line 5).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Beadle and Balakrishnan because Beadle's teaching would have provided the capability for identifying and selecting the remote virtual machine to provide the requested data for the virtual machine.

36. As to claim 29, Balakrishnan teaches the executable data comprises operations, byte-codes, classes and/or translations for the command (col.11, lines 61-64).

Conclusion

37. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Aridor et al. (U.S. 6618737) teaches "Speculative caching of individual fields in a distributed object system"

- Copeland et al. (U.S. 6615235) teaches "Method and apparatus for cache coordination for multiple address spaces"

- Hamzy (U.S. 6604111) teaches "Method and system for spooling virtual machine data-presentation jobs via creation of an executable file"

- Jacobs et al. (U.S. 6571274) teaches "Clustered enterprise Java in a secure distributed processing system"

- Wahbe et al. (U.S. 6151618) teaches "Safe general purpose virtual machine computing system"

- Hsieh et al. "A study of the cache and branch performance issues with running Java on current hardware platforms" 1997 IEEE, pp. 211-216.

- Vajaykrishnan et al. "Supporting object accesses in a Java processor" 2000 IEEE, pp. 435-443.

38. Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAN H. NGUYEN whose telephone number is (703) 306-5971. **After mid-October, 2004, the examiner can be reached at (571) 272-3765.**

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The examiner can normally be reached on Monday-Thursday from 8:30AM - 6:00PM.

The examiner can also be reached on alternative Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on (703) 305-9678.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MENG-AI AN
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TECHNOLOGY CENTER 2100

VHN